MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE. Assistant Editor: H. H. KIMBALL.

VOL. XXX. JUNE, 1902. No. 6

INTRODUCTION.

The MONTHLY WEATHER REVIEW for June, 1902, is based on reports from about 3,100 stations furnished by employees and voluntary observers, classified as follows: Regular stations of the Weather Bureau, 162; West Indian service stations, 13; special river stations, 132; special rainfall stations, 48; voluntary observers of the Weather Bureau, 2,562; Army post hospital reports, 18; United States Life-Saving Service, 9; Southern Pacific Company, 96; Hawaiian Government Survey, 200; Canadian Meteorological Service, 33; Jamaica Weather Office, 160; Mexican Telegraph Service, 20; Mexican voluntary stations, 7; Mexican Telegraph Company, 3; Costa Rican Service, 7. International simultaneous observations are received from a few stations and used, together with trustworthy newspaper extracts and special reports.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Mr. Curtis J. Lyons, Meteorologist to the Hawaiian Government Survey, Honolulu; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Capt. S. I. Kimball, Superintendent of the United States Life-Saving Service; Lieut. Commander W. H. H. Southerland, Hydrographer, United States Navy; H. Pittier, Director of the Physico-Geographic Institute, San Jose, Costa Rica; Capt. François S. Chaves, Director of the Meteorological Observatory, Ponta Delgada, St. Michaels, Azores; W. M. Shaw, Esq. Secretary, Meteorological Office, London; and Rev. Josef Algué, S. J., Director, Philippine Weather Service.

Attention is called to the fact that the clocks and self-registers at regular Weather Bureau stations are all set to seventy-fifth meridian or eastern standard time, which is exactly five hours behind Greenwich time; as far as practicable, only this standard of time is used in the text of the REVIEW, since all Weather Bureau observations are required to be taken and recorded by it. The standards used by the public in the United States and Canada and by the voluntary observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is 157° 30′, or $10^h\ 30^m$ west of Greenwich. The Costa Rican standard of time is that of San Jose, $0^h\ 36^m\ 13^s$ slower than seventy-fifth meridian time, corresponding to $5^h\ 36^m$ west of Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local standard is mentioned.

Barometric pressures, whether "station pressures" or "sea-level pressures," are now reduced to standard gravity, so that they express pressure in a standard system of absolute measures.

FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

Over the greater part of the United States the spring and early summer of 1902 has been unseasonable.

From the Rocky Mountain districts to the Atlantic coast the advent of spring weather was delayed until the first decade of April by a remarkable succession of general storms that appeared in the West and Northwest, swung south of east over the central valleys, and moved thence north of east to the Atlantic coast. May was notable chiefly for the unusual frequency of frost in the northern tier of States.

In June the temperature was low, with excessive rainfall in the North, while in the South high temperature and semi-drought conditions prevailed. In the middle latitudes of the country, where the monthly temperature and rainfall corresponded closely with the June average, the means were a product of extremes that obtained during periods of excess and deficiency in temperature and rainfall. The general atmospheric conditions over the United States, that were associated with the unseasonable weather of June, appear on the weather maps as a succession of general storms that crossed the northern part of the country and a prevalence of relatively high barometric pressure over the Southern States.

Five storms of moderate intensity advanced from the coast of the United States over or near Newfoundland in June. One of these storms first appeared over the Gulf of Mexico, passed northeastward along the Atlantic coast of the United States during the 15th and 16th, was central over the Canadian Maritime Provinces on the 17th, and passed northeast of Newfoundland during the 18th. This disturbance was located over mid ocean on the 19th, and on the 20th its approach was indicated by reports from stations on the west coast of Ireland, where a barometric pressure of 29.24 inches was reported at Valentia. During the 21st and 22d this storm moved northward off the west coasts of Ireland and Scotland. From the 11th to the 13th a disturbance moved southeastward over the British Isles, with barometric pressure of 29.40 inches at London on the 13th; during the 14th and 15th this storm area passed northeastward over the North Sea. From the 23d to the 29th a well-marked disturbance moved slowly from New England over the Canadian Maritime Provinces and Newfoundland, with lowest reported barometric pressure, 29.20 inches, at Montreal on the 26th.

In the Lake region notable storms occurred on the 25th, and from the 28th to the 30th. The storm of the last three days of the month on the lakes first appeared near the mouth of the Rio Grande River on the morning of the 26th, moved northeastward inside the coast line of Texas during the 27th,